

CLAIMS:

1. A process for pre-treating a cellulosic, or cellulosic blends with  
5 synthetic fiber, substrate comprising the steps of:  
    providing a vessel;  
    providing a cellulosic, or cellulosic blends with synthetic fiber, substrate;  
    providing a water bath;  
    adding an active amount of an activating compound selected from the  
10 group of: salts of organic acids, organic amine derivatives, transitional metal  
salts, transitional metal complexes pigments, and combinations thereof;  
    adding an active amount of caustic soda;  
    adding an active amount of hydrogen peroxide;  
    heating the water bath to a temperature in excess of 50 degrees  
15 centigrade for a period of time;  
    achieving a pH from about 6.0 to about 9.0 at the end of a bleaching  
cycle; and  
    dropping the bath.
- 20 2. The process for pre-treating a cellulosic, or cellulosic blends with  
synthetic fiber, substrate according to claim 1 wherein said activating compound  
adding step is performed with about 0.2 to about 5.0% based on the weight of  
the substrate of the salt of an organic acid.
- 25 3. The process for pre-treating a cellulosic, or cellulosic blends with  
synthetic fiber, substrate according to claim 2 further comprising the step of  
selecting a salt of an organic acid from: sodium salts of citric acid, sodium  
stearate, sodium salts of gluconic acid, sodium oleate, potassium salts of citric  
acid, potassium stearate, potassium salts of gluconic acid, potassium oleate,  
30 ammonium salts of citric acid, ammonium stearate, ammonium salts of gluconic  
acid, ammonium oleate, and combinations thereof.

4. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 wherein said activating compound adding step is performed with about 0.2 to about 5.0% based on the weight of the substrate of the organic amine derivative.

5

5. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 4 further comprising the step of selecting an organic amine derivative from: Urea, Dicyandiamide, Tetraacetyl Ethylene Diamine, Acetyl Caprolactam and combinations thereof.

10

6. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 wherein said activating compound adding step is performed with about 0.1 to about 10ppm based on the weight of the bath of the transitional metal.

15

7. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 6 further comprising the step of selecting a transitional metal complex from: copper gluconate, copper sulfate, copper acetate, copper carbonate, copper citrate, copper nitrate, copper EDTA, copper complexes and combinations thereof.

20

8. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 wherein said activating compound adding step is performed with about 1 to about 200ppm based on the weight of the bath of the pigment.

25

9. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 8 further comprising the step of selecting the pigment from: Sulfur Black 1 with a particle size less than 150 $\mu$ m, and fully pre-oxidized sulfur dyes.

30

10. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 9 wherein the pigment is Titanium Dioxide with a particle size less than 150 $\mu$ m.

5           11. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 wherein the water bath is heated to a temperature ranging from about 80 degrees centigrade to about 140 degrees centigrade.

10           12. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 11 wherein said water bath is heated to a temperature for a period ranging from about 0.5 second to about one hour.

15           13. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 further comprising the step of: adding an active amount of a wetting and/or scouring compound.

20           14. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 further comprising the step of: adding an active amount of a peroxide stabilizing compound.

25           15. The process for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate according to claim 1 wherein said bath achieves a pH ranging from about 6.5 to about 8.5 at the end of the bleaching cycle.

            16. A composition for pre-treating a cellulosic, or cellulosic blends with synthetic fiber, substrate prior to dyeing comprising:  
            a non-foaming scouring/wetting agent;  
30           an activating compound selected from the group of: salts of organic acids, organic amine derivatives, transitional metals, pigments, and combinations thereof;

caustic soda; and  
hydrogen peroxide.

17. A composition according to claim 16, wherein said activating  
5 compound is a salt of an organic acid is selected from sodium salts of citric acid, sodium stearate, sodium salts of gluconic acid, sodium oleate, potassium salt of citric acid, potassium stearate, potassium salt of gluconic acid, potassium oleate, ammonium salts of citric acid, ammonium stearate, ammonium salts of gluconic acid, ammonium oleate, and combinations thereof.

10

18. A composition according to claim 17, wherein said salt of organic acid is about 0.2 to about 5.0% based on the weight of the substrate ("owg").

19. A composition according to claim 16, wherein said activating  
15 compound is an organic amine derivative selected from urea, dicyandiamide, tetra-acetyl-ethylene-di-amine, acetyl-caprolactam, and combinations thereof.

20. A composition according to claim 19, wherein said organic amine derivative is about 0.2 to about 5.0% owg.

20

21. A composition according to claim 16, wherein said activating compound is a transitional metal complex selected from copper gluconate, copper sulfate, copper acetate, copper carbonate, copper citrate, copper nitrate, copper EDTA, copper complexes, and combinations thereof.

25

22. A composition according to claim 21, wherein said transitional metal is about 0.1 to about 10ppm based on the weight of the bath ("owb").

23. A composition according to claim 16, wherein said activating  
30 compound is a pigment selected from pigmented Sulfur Black 1 with a particle size less than 150 $\mu$ m, fully pre-oxidized sulfur dyes, and combinations thereof.

24. A composition according to claim 23, wherein said pigment is selected from Diresul Black 4G-EV and Titanium Dioxide.

25. A composition according to claim 23, wherein said pigment is about 1  
5 to about 200ppm owb.

26. A composition according to claim 16, wherein said non-foaming scouring/wetting agent is selected from ethoxylated fatty alcohol and propoxylated fatty alcohol.  
10

27. A composition according to claim 26, wherein said non-foaming scouring/wetting agent is about 0.1 to about 1.5% owg.

28. A composition according to claim 16 further comprising a peroxide  
15 stabilizer.

29. A composition according to claim 28, wherein said peroxide stabilizer is selected from an organo-phosphate based agent, an amino-organic acid based agent, an organic acid based agent, a polyacrylic acid based agent, an  
20 earth alkaline salt, and combinations thereof.

30. A composition according to claim 29, wherein said organo-phosphate based agent is Diethylenetriamine penta(methylene phosphonic acid), said amino-organic acid based agent is Diethylenetriamine pentaacetic acid, said  
25 organic acid based agent is Sodium salt of Gluconic Acid, and said earth alkaline salt is  $Mg^{+2}$  salt.